



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,610	07/13/2001	Toshimori Miyakoshi	1272.C0465	2208

5514 7590 07/18/2002

FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER
----------

NGUYEN, LAM S

ART UNIT	PAPER NUMBER
----------	--------------

2853

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/903,610

Applicant(s)

MIYAKOSHI, TOSHIMORI

Examiner

LAM S NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> . | 6) <input type="checkbox"/> Other:  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being obvious by Matsubara (US 5576745).

Matsubara discloses a method for controlling the drive energy of an ink jet print apparatus wherein a print element is driven to eject an ink from an ink jet print head to a printing medium for performing printing, the method comprising:

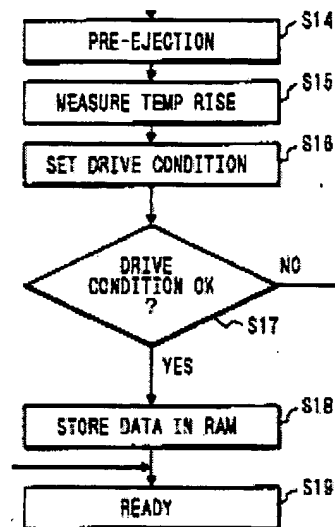
a first step for supplying a plurality of different drive energies successively to said ink jet print head (column 17, line 43-44: heating the recording heat by supplying a plurality of different drive energies successively indicated by a sequence of two pulses (FIG. 15);

a second step for monitoring temperature of each of said ink jet print head according to the supply of said drive energy (column 17, line 45-47);

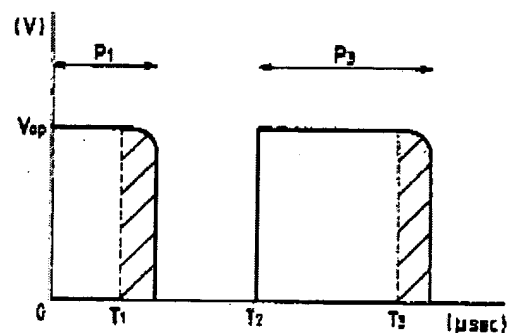
a third step for judging a threshold drive energy (in term of “a thermal change state”) required for ink ejection of said ink jet print head using a value for said supplied drive energy and a value for said monitored temperature (column 17, line 48-50: teaching a determination of the thermal characteristic that is a thermal change state of the thermal head by energizing the thermal head (column 3, line 26-27) based on the temperature change caused by a supplied drive energy);

a fourth step for determining a drive condition for ejecting ink on the basis of said threshold drive energy (column 17, line 52-54: a threshold drive energy is implied in the term "a thermal characteristic" as explained above); and

a fifth step for driving said print element on the basis of said determined drive condition (column 17, line 56-57).



Referring to claims 2, 8: wherein in said first step, a difference of the amount of the drive energy supplied to said ink jet print head is generated by changing a pulse width of a drive pulse signal applied to said print element (FIG. 15: the pulse widths of P1 and P3 are modulated).



**Referring to claims 3, 9:** wherein in said first step, an initial drive energy supplied is determined on the basis of drive condition information (in term of “a standard drive condition”) stored in said ink jet print head (column 1, line 59-67).

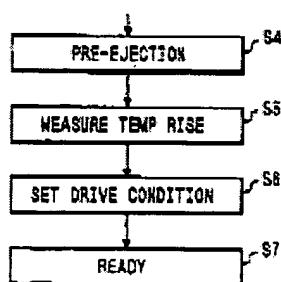
**Referring to claims 6, 12:** A method for controlling the drive energy of an ink jet print apparatus wherein a print element is driven to eject an ink from an ink jet print head to a printing medium for performing printing, the method comprising:

a first step for supplying a plurality of different drive energies successively to said ink jet print head (FIG. 10, step S4 and FIG. 15);

a second step for monitoring temperature of each of said ink jet print head according to the supply of said drive energy (FIG. 10, step S5);

a third step for determining a drive condition for ejecting ink using a value for said supplied drive energy and a value for said monitored temperature (FIG. 10, step S6); and

a fourth step for driving said print element on the basis of said determined drive condition (FIG. 10, step S7: READY means ready to record (column 10, line 58)).



**Referring to claim 14:** wherein said memory provided on said ink jet print head is an EEPROM (column 11, line 35-44).

**Referring to claims 4, 5, 10, 11:** wherein in said fifth step, when said determined drive condition is different from drive condition information stored in said ink jet print head, drive

• Art Unit: 2853

condition information stored in said ink jet print head is updated with the determined drive condition data or when both are different, drive energy to drive said print element is changed (FIG. 11, steps S17 and S18), then based on new data stored in RAM, new pulse width modulation is done).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342.

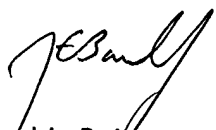
The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN

July 15, 2002

  
John Barlow  
Supervisory Patent Examiner  
Technology Center 2800